REMARKS/ARGUMENTS

Prior to this Amendment, claims 1-20 were pending in the Application.

Independent claims 1, 8, 13, and 17 are amended to address claim objections and an indefiniteness issue. Applicants request that the claim amendments be entered because they do not require additional searching by the Examiner or place an undue burden on the Examiner but instead the amendments place the claims in condition for allowance or at least in better condition for use on appeal.

After entry of the Amendment, claims 1-20 remain for consideration by the Examiner.

Claim Objections

In the Office Action mailed January 3, 2007, claims 1, 8, 13, and 17 were objected to due to the use of the phrase "can be" since this is not a positive recitation. Claims 1, 8, 13, and 17 have been amended to delete these terms and to address this objection.

Claim Rejections Under 35 U.S.C. §112

Also, in the Office Action, claims 1-20 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite due to the use of the phrase "simultaneously with or a number of cycles later" in independent claims 1, 8, 13, and 17. These claims have been amended to address this rejection.

Claim Rejections Under 35 U.S.C. §103

In the Office Action, claims 1-20 were rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Pat. No. 5,359,592 ("Corbalis"). This rejection is traversed based on the following remarks.

Claim 1 is directed to a computer system with a plurality of modules and a routing control mechanism that controls flow of packets on a packet transmission network. Each of the modules "is operable to generate to the routing control

mechanism a transfer request to request transfer of a current packet and an arbitration request requesting a routing decision for a later packet" and further "to make the arbitration request simultaneously with the transfer request for the current packet." Corbalis fails to teach modules that make arbitration requests for a routing decision for a later packet and that such arbitration requests may be sent simultaneously with transfer requests for a current packet. Hence, Corbalis fails to anticipate the system of claim 1.

More specifically, Corbalis is cited in the Office Action for teaching the routing control mechanism with its arbiter (e.g., element 41 of Figure 2) and its communication modules are cited in the Office Action as functioning to generate or make arbitration requests for later packets simultaneously with transfer requests at col. 5, lines 55-60. Applicants disagree because Corbalis teaches that its arbiter 41 acts to poll the communication modules 50-53 based on a polling schedule to determine if additional cells are ready to be transferred. There is no teaching in Corbalis that the modules 50-53 proactively request that the arbiter 41 make a routing decision for any packets let alone ones to be sent later or after the current packet. Further, there is no discussion that such an arbitration request is sent simultaneously with a transfer request, and even the polling performed by the arbiter is not performed simultaneously with receipt of a transmission request.

At col. 5, beginning at line 55, Corbalis teaches that the module 50 "generates a transmission request in response to a poll by the arbiter 41." The arbiter 41 then "configures the switching circuit 42 to create" a link between module 50 and a destination module. At col. 6, line 17, Corbalis states that the "arbiter 41 polls the communication modules 50-53 according to a sequence determined by the control processor 40" so as to "ensure that each of the communication modules 50-53 have sufficient access" to links through the switching circuit 42. In col. 7, lines 47-53, Corbalis teaches that during "a current FRAME, the arbiter 41 polls the communication modules 50-53 to determine transmission requests for the next FRAME." As can be

seen, the arbiter is determining which modules have additional transmissions and this is done during the current FRAME. Hence, the modules 50-53 are not acting to generate arbitration requests but instead the arbiter 41 is arbitrating proactively via the polling schedule. Further, it can be seen that there are no arbitration requests being made for later packets simultaneously with the transfer request of a current packet. The communication modules 50-53 do not generate an arbitration request, and even if the act of polling by the arbiter 41 were construed to teach such a request generation it is not being performed simultaneously with a transfer request for a current packet. Hence, Corbalis fails to teach each and every limitation of the system of claim 1 as required by 35 U.S.C. §102, and Applicants respectfully request that the rejection of claim 1 be withdrawn.

Claims 2-7 depend from claim 1 and are believed allowable over Corbalis at least for the reasons provided for allowing claim 1 over this reference. Further, claim 4 calls for the current and later packets to be generated by the same module, and Corbalis at the cited col. 6, lines 5-10 teaches that the arbiter 41 polls module 51 whereas the prior module had been module 50 (see col. 5, lines 49-66) so even if Corbalis taught (which it does not) that the modules 50-53 generated arbitration requests it clearly fails to teach that each module may be requesting arbitration while its current cell or cells are being transmitted. Claim 7 calls for the routing control mechanism to operate to issue "an arbitration grant signal" indicating an arbitration decision in response to an arbitration request has been committed, and Corbalis fails to show that its arbiter 41 issues such signals. The Office Action cites Corbalis at col. 7, lines 46-55, but at this citation Corbalis discusses that the arbiter 41 polls the modules 50-53 and the modules 50-53 transmit cell frames over lines 62 that are granted. However, there is no mention of a signal as called for in claim 7 being issued by the arbiter 41. For these additional reasons, Corbalis fails to anticipate claims 4 and 7.

Independent claim 8 is directed to a device with limitations similar to that of claim 1, and hence, the reasons for allowing claim 1 over Corbalis are believed applicable to

claim 1. Specifically, as discussed with reference to claim 1, Corbalis fails to show that its communication modules 50-53 issue arbitration requests but instead they are polled for transmission requests by the arbiter 41. Further, claim 8 calls for the arbitration request to be "made prior to completion of transfer of the first packet on the packet transmission network." Again, the modules 50-53 do not generate arbitration requests and the polling of a particular module, such as module 50, does not have to be performed such that it is polled before its prior transmission request is fulfilled. For this additional reason, claim 8 is believed allowable over the teaching of Corbalis.

Claims 9-12 depend from claim 8 and are believed allowable over Corbalis at least for the reasons provided for claim 8.

Independent claim 13 calls is directed toward a packet routing mechanism and includes limitations similar to claim 1, and the reasons for allowing claim 1 over Corbalis are believed applicable to claim 13. Further, claim 13 calls for the mechanism to include a decision queue "for storing at least one decision which has been made by the arbitration mechanism" and this feature is not shown by Corbalis. The Office Action cites to Corbalis' cell queue circuit as described at col. 8, lines 55-65, but the queue circuit described at this citation is a circuit provided within the CIM 290, 292, which is a communication interface module within a communication module 50-53 (see Figure 3 for example). The CIM 290, 292 is described as receiving "outbound communication cells from the CIF 77" and buffering "the outbound communication cells for transfer over the broadband communication link 30" at col. 8, lines 55-62. There is no discussion of storing decisions by the arbiter 41 in this citation, and hence Corbalis fails to show the decision queue of claim 13 and to anticipate the mechanism of claim 13 for this additional reason.

Claims 14-16 depend from claim 13 and are believed allowable at least for the reasons provided for allowing claim 13 over Corbalis. Further, claim 14 calls for the arbitration decisions to be made based on availability of a target device. The Office Action cites Corbalis at col. 8, lines 10-15, but at this citation, Corbalis states that a

portion of the communication module 50 (i.e., CIF 77) holds a cell until it receives a poll from arbiter 41 and waits for the right type of poll (i.e., a single-destination poll or a multi-cast poll) prior to providing its transfer request. There is no discussion that the arbiter 41 changes its polling schedule based on the availability of destination devices. Further, claim 16 calls for a specific handshake control that is not shown by Corbalis at the cited col. 7, lines 47-63, which describes the use of current and next FRAMES without discussing handshake controls let alone "a net grant signal indicating the packet routing network will be ready to accept the later packet on completion of the transfer of the current packet." For these additional reasons, claims 14 and 16 are believed allowable over Corbalis.

Independent claim 17 is directed to a method for making pipelined routing decisions in a computer system that includes limitations similar to those found in claim 1 but in method form. Hence, the reasons for allowing claim 1 are believed applicable to claim 17. In contrast to claim 1, the arbitration request is made a number of cycles after the transfer request (rather than simultaneous with the transfer request for the current packet) but while the transfer of the current packet is occurring. As discussed with reference to claim 1, Corbalis fails to show "generating an arbitration request for a later packet" but instead teaches polling of communication modules 50-53 with an arbiter 41. The modules 50-53 respond to such polling by generating transfer requests (for a single destination or multi-destinations). As a result, Corbalis fails at least to show the arbitration request generating step of claim 17.

Claims 18-20 depend from claim 17 and are believed allowable over Corbalis at least for the reasons for allowing claim 17. Further, claim 20 calls for "causing a target device to indicate that it is in a state to accept a packet by asserting a grant signal," and Corbalis fails to show this additional limitation. The Office Action cites Corbalis at col. 7, line 65. At this citation, Corbalis states the "arbitration/control bus 63 includes a polling bus 66 and a response bus 65, and a grant signal 68." However, at col. 8, lines 6-7, Corbalis indicates that the grant signal 68 is transmitted by the arbiter 41 and not

by the target device as called for in claim 20, and claim 20 is believed allowable due to this additional deficiency of Corbalis.

Conclusions

In view of all of the above, it is requested that a timely Notice of Allowance be issued in this case.

No fee is believed due for this submittal. However, any fee deficiency associated with this submittal may be charged to Deposit Account No. 50-1123.

Respectfully submitted,

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